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ABSTRACT

In human speech, messages are conveyed to listeners through both verbal and vocal sources. Comparing verbal content-only with verbal plus vocal content permits assessment of the contribution of vocal cues in spoken messages. This study involved evaluations of physicians interacting with patients via the telephone. Thirty doctor-patient interactions were presented to college students who served as raters in an audio-only (N=35) or a transcript-only (N=25) condition. Following each segment, subjects rated the physicians using 10 bipolar adjective pairs which resulted in supervariables of empathic, dominant, and calm. The results revealed that females rated doctors as more empathic, dominant, and calm than did males, and communication modes were significantly different with audio segments rated more positively. Middle phases were evaluated more positively than greeting phases. Interactions between temporal phase and mode indicated that audio segments were interpreted more positively during middle phases. Also, female raters were more sensitive to audio segments. Physicians' amplitude and speech rate were positively correlated with dominance ratings. These findings suggest that vocal cues are subtle but powerful aspects of a message which account for a considerable portion of the information individuals use in developing perceptions of others. (Author/NB)

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PHYSICIANS' VOICES:

IMPRESSIONS OF INTERVIEWING STYLES VIA THE TELEPHONE

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ABSTRACT

PHYSICIANS' VOICES:

IMPRESSIONS OF INTERVIEWING STYLES VIA THE TELEPHONE

This study involved evaluations of physicians interacting with patients via the telephone. Subjects used ten adjectives resulting in supervariables: emphathic, dominant, and calm. Thirty doctor-patient interactions were presented in two communication modes: audio-only and transcript-only. Females rated doctors as more empathic, dominant, and calm, and communication modes were significantly different with audio segments rated more positively. Middles phases were evaluated more positively than greeting phases. Interactions between temporal phase and mode indicated that audio segments were interpreted more positively during middle phases. Also, female raters were more sensitive to audio segments. Physicians' amplitude and speech rate were positively correlated with dominance ratings.

In human speech there are two concurrent sources of information which convey messages to listeners. The verbal component refers to the lexical and grammatical content associated with what a person says. The vocal component is relevant to how a person says something. Vocal behaviors involve acoustic parameters such as amplitude (or intensity), pitch (i.e., fundamental frequency), tempo, and duration, and characteristics of the speech pattern, (disfluencies, pausing). Each component carries different information and interacts with the other, influencing the listener's interpretation of the overall message. Vocal cues are believed to reveal underlying affect conveyed without the speaker's full awareness (Williams and Stevens, 1972).

Researchers have shown that emotions can be reliably decoded using only the vocal channel (Costanzo, et al., 1969; Davitz, 1964), and personality characteristics have been inferred from vocal cues: extraversion, dominance, etc. (Bugental, Heneker, and Whalen, 1976; Scherer, 1974). Vocal cues are particularly salient when the verbal and vocal messages conflict and greater weight has been given to vocal cues (Bugental, Love, Kaswan, and April, 1971; Mehrabian and Wiener, 1967).

The influence of vocal cues can have a critical effect in therapeutic settings. Duncan, Rice, and Butler (1968) demonstrated that therapists' vocal behavior differentiated "peak" and "poor" psychotherapy hours. Milmoe, Rosenthal, Blane, Chaftez, and Wolf (1967) showed that physicians' vocal anxiety was related to successful referral for alcoholism treatment. There have been few investigations relating physicians' vocal behavior with evaluative indices. Hall, Rotter, and Rand (1981) reported a difference in patient contentment for uttered words versus vocal cues. Physicians' vocal behavior is particularly interesting in light of the time physicians spend with patients via the telephone, 25% (Curtis, 1983).

Comparing verbal content-only with verbal plus vocal content permits assessment of the contribution of vocal cues in spoken messages. We hypothesized that audio cues would be more positively evaluated than verbal-only cues because of the added message value of more information, but also because of the affective and attitudinal information conveyed about the expressor. Females are considered more expressive, socio-emotional, and interpersonally sensitive (Broverman, Vogel, Broverman, Clarkson, and Rosenkrantz, 1972). We hypothesized

that female raters would evaluate physicians more positively than males, and that female raters would be more positively affected by audio versus transcript cues. We hypothesized that male physicians should be evaluated as more dominant and female physicians as more empathic. Finally, we hypothesized that ratings of dominance and extraversion would be positively correlated with amplitude (i.e., loudness) and rate of speech.

METHOD

Two groups of raters judged the stimuli. In Group 1 there were 35 participants and in Group 2 there were 25. All were undergraduate psychology students who ranged in age from 19 to 29 years ($\underline{M}$=20.1), 62% were female and 82% Caucasion. Subjects in Group 1 rated audio cues (verbalizations plus vocal tone) and subjects in Group 2 rated transcripts (verbalizations-only). Both sets of stimuli were taken from the same doctor-patient telephone interviews. Thirty family medicine physicians were audiotaped during a telephone conversation with the mother of a two year old child who had diarrheal symptoms. Viral gastroenteritis was selected because it is a common illness and one which can easily be managed over the telephone.

Physicians were 19 males and 11 females from family practice residency training. Telephone calls were made during routine office hours. Conversations were edited so that specific temporal segments could be examined. Greeting phases are important in opening conversations and middle phases represented a standardized time frame. Greeting phases were consistent, approximately 10 seconds, and the middle phases included 22 seconds preceding and following the middle-most second of conversation, for a total of 45 seconds. The greeting phases were randomly edited onto the stimulus audiotape, followed by the 30 randomly edited middle phases. These represented audio segments for Mode. Transcriptions were made of each greeting and middle phase. These stimuli represented the transcript segments for Mode. Following each audio or transcript segment subjects rated the physicians using 10, 9-point bipolar adjective pairs used previously. Adjectives were: cold-warm; anxious-calm, submissive-dominant; hostile-friendly; passive-active; incompetent-competent; insincere-sincere; can confide in-cannot confide in; uninterested in patient-interested in patient; unconcerned about patient-concerned about patient.

RESULTS

Principal components analysis was performed on the 10 adjective scales for data reduction. Three final variables were Empathic (warm, friendly, competent, sincere, can confide in, interested in patient, and concerned about patient); Dominant (dominant and active); and Calm. Physicians' vocal cues were coded with respect to amplitude, pitch, and rate.

A two between, two within ANOVA was computed for each adjective. Between subjects factors were mode (audio, transcript) and rater sex and within subjects factors were physician sex and temporal phase (greeting, middle). As predicted, mode was also significant for each adjective: Empathic F (1,28)=67.39, $p < .0001$, effect size r=.84; Dominant F (1, 28)=75.00, $p < .0001$, r=.85; Calm F (1,28)=177.49, $p < .00001$, r=.93. Audio cues were rated more positively than transcript cues. Rater sex was significantly different for: Empathic F=(1,28)=119.03, $p < .0001$, r=.90; Dominant F (1,28)=245.10, $p < .0001$, r=.95; Calm F (1,28)=11.27, $p < .0005$, r=.54. Female subjects rated physicians more positively. Physician sex was not significant. Temporal phase was rated as significantly different for Dominant F (1,28)=5.07, $p < .05$, r=39; middle phases were judged as most dominant. Rater sex X mode was significant for each adjective: Fs ranged between 18.21 and 48.07. The main effect for rater sex was greater for audio than transcript cues. Mode X temporal phase interactions were significant for each adjective: main effect for mode was greater for middle than greeting phases; Fs ranged between 10.06 and 23.57. Physician sex X mode was significant for Dominant F (1, 238)=7.93, $p < .01$; male physicians were judged as more dominant in the audio mode.

Mean fundamental frequency of physicians' speech (i.e., pitch) was 91.68 with a standard deviation of 17.26; amplitude M=37.68, SD=3.01; and rate M=177.42, SD=34.22. Correlations we re computed between the adjective variables and paralinguistic variables. Significant correlations were found between Dominant and amplitude (r=.42, $p < .05$ and Dominant and rate (r=.42, $p < .05$; as amplitude and rate increased, judgments of dominance also increased.

DISCUSSION

Audio cues clearly were evaluated more positively than transcripts containing only uttered words. This suggests that vocal cues add significantly more to the stimulus value, providing unique information not present in bare verbalizations. Effects of audio cues are even greater when temporal sequence is considered. Greetings may be as stereotyped vocally as they are verbally, and differences in style are not as pronounced as differences in physicians' vocal behavior during middle phases. During middle phases doctors were giving instructions and treatment information, which may be viewed as more dominant and active behaviors.

Females displayed more sensitivity in judging personal attributes of physicians. This parallels conclusions drawn in other studies where females differentiated individuals on the basis of information related to affective and attitudinal dimensions of behavior (Broverman et al., 1972). Females' differential skill is more apparent when affective stimuli (audio cues) are presented. Awareness of this difference is important in medicine where a majority of patients are female and where patient dissatisfaction (noncompliance, doctor-shopping) are associated with negative impressions of physicians' interpersonal behavior.

In conclusion, vocal cues are subtle but powerful aspects of a message which account for a considerable portion of the information we use in developing our perceptions of others. This message channel is indispensable in establishing the context in which a verbal behavior is to be understood.

REFERENCES

Broverman, I.K., Vogel, S.R., Broverman, D.M., Clarkson, and Rosencrantz, P.S. (1972). Sex-role stereotypes: A current appraisal. Journal of Social Issues, 28, 59-78.

Bugental, D.E., Love,, L.R., Kaswan, J.W., and April, C. (1971). Verbal-nonverbal conflict in parental messages to normal and disturbed children. Journal of Abnormal Psychology, 77, 6-10.

Bugental, D.E., Henker, B., and Whalen, C.K. (1976). Attributional antecedents of verbal and vocal assertiveness. Journal of Personality and Social Psychology, 34, 405-411.

Costanzo, F.S., Markel, N.N., and Costanzo, P.R. (1969). Voice quality profile in perceived emotion. Journal of Counseling Psychology, 16, 267-270.

Curtis, P. (1984). Decision-making behaviors of primary care physicians over the telephone. In Press.

Davitz, J.R. (1964). The communication of emotional meaning. New York: McGraw-Hill.

Duncan, S., Jr., Rice, L.M., and Butler, J.M. (1968). Therapists' paralanguage in peak and poor psychotherapy hours. Journal of Abnormal Psychology, 73(6), 566-570.

Hall, J.A., Roter, D.L., and Rand, C.S. (1981). Communication of affect between patient and physician. Journal of Health and Social Behavior, 22, 18-30.

Mehrabian, A. (1972). Nonverbal Communication. Chicago: Aldine-Atherton.

Milmoe, S., Rosenthal, R., Blane, H..T., Chaftez, M.E., and Wolf, I. (1967). The doctor's voice: Postdictor of successful referral of alcoholic patients. Journal of Abnormal Psychology, 72, 78-84.

Scherer, K.S. (1974). Acoustic concomitants of emotional dimensions: Judging affect from snythesized tone sequences. In S. Weitz 9Ed.) Nonverbal communication: Readings with commentary, pp. 105-111. New York: Oxford University Press.

Williams, C.E., and Stevens, K.N. (1972). Emotions and speech: Some acoustical correlates. Journal of the Acoustical Society of America, 52(4), 1238-50.